

## WHAT IS CLAIMED IS:

1. A high frequency amplifier for amplifying a high frequency signal using a plurality of amplifier sections, said high

5 frequency amplifier comprising:

a constant voltage driven amplifier section using an amplifying element biased by a constant voltage; and

a constant current driven amplifier section using an amplifying element biased by a constant current, wherein

10 said constant voltage driven amplifier section and said constant current driven amplifier section are parallelly combined.

2. The high frequency amplifier according to claim 1, wherein

15 said high frequency amplifier has  $n$  amplifier sections including  $m$  constant current driven amplifier sections and  $(n-m)$  constant voltage driven amplifier sections that are parallelly combined, wherein  $n$  is an integer equal to or greater than two, and  $m$  is an integer equal to or greater than one and equal to or less

20 than  $(n-1)$ .

3. The high frequency amplifier according to claim 2, wherein

each of said constant voltage driven amplifier sections uses a bipolar transistor as the amplifying element, and has its base biased by a constant voltage; and

25 each of said constant current driven amplifier sections uses a bipolar transistor as the amplifying element, and has its base biased by a constant current.

30 4. The high frequency amplifier according to claim 2, wherein

5 said constant voltage driven amplifier sections comprise an input matching constant voltage bias circuit for carrying out input matching and for supplying a constant bias voltage to the amplifying elements, and an output matching power supply circuit for carrying out output matching and for supplying power to the amplifying elements; and

10 said constant current driven amplifier sections comprise an input matching constant current bias circuit for carrying out input matching and for supplying a constant bias current to the amplifying elements, and an output matching power supply circuit for carrying out output matching and for supplying power to the amplifying elements.

15 5. The high frequency amplifier according to claim 2, further comprising an output matching power supply circuit for supplying power to said constant voltage driven amplifier sections and to said constant current driven amplifier sections, and for carrying out output matching of said constant voltage driven amplifier sections and of said constant current driven amplifier sections, wherein

20 said constant voltage driven amplifier sections comprise an input matching constant voltage bias circuit for carrying out input matching and for supplying a constant bias voltage to the amplifying elements, and

25 said constant current driven amplifier sections comprise an input matching constant current bias circuit for carrying out input matching and for supplying a constant bias current to the amplifying elements.

30 6. The high frequency amplifier according to claim 2, further

comprising an input matching circuit for carrying out input matching of said constant voltage driven amplifier sections and said constant current driven amplifier sections; and

5 an output matching power supply circuit for supplying power to said constant voltage driven amplifier sections and said constant current driven amplifier sections, and for carrying out output matching of said constant voltage driven amplifier sections and said constant current driven amplifier sections, wherein

10 said constant voltage driven amplifier sections comprise a constant voltage bias circuit for supplying a constant bias voltage to the amplifying elements; and

15 said constant current driven amplifier section comprise a constant current bias circuit for supplying a constant bias current to the amplifying elements.

7. The high frequency amplifier according to claim 1, wherein the amplifying elements comprise a bipolar transistor whose base is biased by the constant voltage and a bipolar transistor whose base is biased by the constant current, the bipolar transistors being formed on a same chip with their bases separated; a collector lead-out pattern for connecting a collector of said bipolar transistor biased by the constant voltage and a collector of said bipolar transistor biased by the constant current to a single collector pad;

20 25 an emitter lead-out pattern for connecting an emitter of said bipolar transistor biased by the constant voltage and an emitter of said bipolar transistor biased by the constant current to a single emitter pad;

30 a base lead-out pattern for connecting a base of said bipolar

transistor biased by the constant voltage to a base pad supplied with the constant bias voltage; and

a base lead-out pattern for connecting a base of said bipolar transistor biased by the constant current to a base pad supplied with the constant bias current, wherein

5 said base lead-out patterns and said emitter lead-out pattern are configured such that they have little or no overlapping section.

10 8. The high frequency amplifier according to claim 2, wherein each of said constant voltage driven amplifier sections uses an FET as the amplifying element, and has a gate of the FET biased by a constant voltage; and

15 each of said constant current driven amplifier sections uses a bipolar transistor as the amplifying element, and has a base of the bipolar transistor biased by the constant current.